

Trek Model 152-1

Surface/Volume Resistance Meter



The Trek Model 152-1 Surface/Volume Resistance Meter is designed to precisely measure surface or volume resistance on a wide variety of conductive, dissipative, and insulative materials. It features exceptional measurement accuracy and wide measurement ranges. When used with Trek's uniquely-designed 152P-CR-1 concentric ring probe (shown to left), the instrument provides consistent ease of operation even at very high resistance values. The Model 152-1 is lightweight, portable and operable via batteries or an AC line power source with battery eliminator.

Key Specifications

- Measurement Range: 10^3 to $10^{13} \Omega$
- Measurement Accuracy (of reading) at $25^\circ \pm 10^\circ \text{C}$ and 20% to 70% RH:
 - Point to Point Probe (152BP-5P): 10^3 to $10^{12} \Omega$ range, $\pm 5\%$
 $10^{13} \Omega$ range, $\pm 8\%$
 - Concentric Ring Probe (152-CR-1): 10^3 to $10^{13} \Omega$ range, $\pm 5\%$
 - Two Point Resistance Probe (152P-2P): 10^3 to $10^{11} \Omega$ range, $\pm 5\%$
- Probe Electrode Test Voltage: User selectable, 10 V or 100 V $\pm 2\%$
- Test Limit Current: Limited to less than 13 mA in 10 V range and 1.7 mA in 100 V range

Typical Applications Include

- Measuring surface or volume resistance on materials
 - Conductive, dissipative, insulative
- Measuring in accordance with ANSI/ESD Standards for
 - Garments (STM2.1)
 - Work surfaces (S4.1)
 - Flooring (S7.1)
 - Footwear (STM9.1)
 - Planar materials (STM11.11)
 - Volume resistance (STM11.12 and IEC 61340-2-3)
 - Seating (STM12.1)
 - Two point resistance measurements (STM11.13)
 - Floor materials/footwear (STM97.1)



Features and Benefit

- Complies to ANSI/ESD Association Standards
- Concentric ring probe pre-amplifier eliminates interference and enables reliable operation at high resistance values
- Exceptional accuracy, stability and repeatability
- Wide measurement range (10^3 to $10^{13} \Omega$)
- Elastomer electrodes for excellent surface contact
- Optional accessories include a Walking Test Adapter and Test Plate set
- NIST-traceable Certificate of Calibration provided with each unit
- CE compliant



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Model 152-1 Specifications

Performance

Resistance Measurement Range	10^3 to $10^{13} \Omega$
Resistivity	Resistance X Factor 10 = Resistivity
Measurement Accuracy (of the reading) at 25 °C and 20% to 70% RH	<p><i>Point-to-point 5 lb probe (152BP-5P)</i> 10^3 to $10^{12} \Omega$ range, $\pm 5\%$ $10^{13} \Omega$ range, $\pm 8\%$</p> <p><i>Concentric Ring Probe (152P-CR)</i> 10^3 to $10^{12} \Omega$ range, $\pm 5\%$ $10^{13} \Omega$ range, $\pm 8\%$</p> <p><i>Two point resistance probe (152P-2P)</i> 10^3 to $10^{11} \Omega$ range, $\pm 5\%$ 10^{12} to $10^{13} \Omega$ range, $\pm 10\%$</p>
Probe Electrode Test Voltage	User selectable 10 V or 100 V, $\pm 2\%$
Test Current Limit	Limited to less than 13 mA in the 10 V range and less than 1.7 mA in the 100 V range

Features

LCD Display	Three digits plus two digit exponent (scientific notation)
Low Battery Indicator	LCD message for low battery
Test Voltage Range Indicator	Indicates the test voltage selected, either 10 V or 100 V
Automatic Shutoff	If the unit is left idle for longer than 10 minutes, the unit automatically turns off
ANSI / ESD Association Standards	The Model 152-1 conforms to ANSI / ESD Association Standards for measuring surface resistance and surface resistivity. Please refer to the <i>Applications</i> section on page 1 of this data sheet for more information

Test Probes/Accessories

Model 152BP-5P Test Probes	Set of 2 (2.27 kg / 5 lb). Available for performing resistance measurements including ANSI/ESD STM 4.1 standards (point-to-point or resistance to ground measurement)
Model 152P-2P Two-Point Resistance Probe	Performs measurements on surface areas too small to be measured with conventional probes
Model 152P-CR-1 Surface/Volume Concentric Ring Probe*	Measures surface and volume resistance of materials as per IEC or ESDA standards. A three (3) position switch on the probe selects either SURFACE distance or VOLUME resistance measurements with either a GUARDED or UNGUARDED outer electrode. Uses an exclusive built-in pre-amplifier design.
Model 152AP-Resistance Probes (miniature, set of 2)	3mm X 25.4mm. Can be handheld or randomly positioned.

Test Probes / Accessories (cont.)

Test Plate Set (consists of two separate plates)	The use of these plates is described in the ESD STM 11.12 (IEC 61340-2-3) standard
<i>Conductive Plate</i>	(5" x 5" / 127 mm x 127 mm) A stainless steel conductive plate with a mini banana plug
<i>Insulative Plate</i>	(5.4" x 5.4" / 137 mm x 137 mm) Acts as an insulative surface
Walking Test Adapter Kit	The Walking Test Adapter allows the analysis of resistance levels on the human body (STM 97.1)

Mechanical

Dimensions	180 mm H x 100 mm W x 44 mm D (7" H x 4" W x 1.75" D)
Weight	Approximately 0.5 kg (1 lb.) with battery

Operating Conditions

Temperature	15°C to 35°C (59 °F to 95 °F)
Relative Humidity	5% to 80%, non-condensing
Altitude	To 2000 m (6561.68 ft.)

Power Requirements

Battery Operation	Two (2) 9-Volt batteries (NEDA 1605 Alkaline, or equivalent) provide approx 6 hrs of power
AC Line Operation	The use of an AC battery eliminator allows for AC line operation. The eliminator output connector is a female type 2.1 mm, DC power plug

Included Accessories

Operator's Manual	PN: 23426
Ground Cord	PN: N9044
Universal AC Adapter	PN: F5054R

Optional Accessories

Test Plate Set	PN: 17530
Carrying Case	PN: 43378
Walking Test Adapter Kit	PN: 1K039

Notes

*The Model 152-CR-1 will operate with the previous Model 152 resistivity meter in "surface" mode, just as the Model 152-CR probe did. The 152-CR will operate with the Model 152-1 Resistance Meter with the measurement being in "ohms," not "ohms/sq."

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